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## MEDIUM-MU TRIODE— SHARP-CUTOFF PENTODE

9-PIN MINIATURE TYPE  
Intended for use in equipment having  
series heater-string arrangement

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathodes:

Voltage . . . . . 6.3 . . . . . ac or dc volts  
Current . . . . . 0.6 . . . . . amp  
Warm-up time (Average). . . 11 . . . . . sec

*For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.*

Direct Interelectrode Capacitances:<sup>0</sup>

*Triode Unit:*

Grid to plate . . . . .	2.2	$\mu\mu\text{f}$
Grid to cathode and heater. . . . .	2.6	$\mu\mu\text{f}$
Plate to cathode and heater . . . . .	0.34	$\mu\mu\text{f}$

*Pentode Unit:*

Grid No.1 to plate. . . . .	0.044	$\mu\mu\text{f}$
Grid No.1 to cathode & grid No.3 & internal shield, grid No.2, and heater. . . . .	7.5	$\mu\mu\text{f}$
Plate to cathode & grid No.3 & internal shield, grid No.2, and heater. . . . .	2.4	$\mu\mu\text{f}$
Triode grid to pentode plate. . . . .	0.022 max.	$\mu\mu\text{f}$
Pentode grid No.1 to triode plate . . .	0.006 max.	$\mu\mu\text{f}$
Pentode plate to triode plate . . . . .	0.12 max.	$\mu\mu\text{f}$

#### Characteristics, Class A<sub>1</sub> Amplifier:

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Plate-Supply Voltage. . . . .	150	200	volts
Grid-No.2-Supply Voltage. . . .	—	125	volts
Cathode Resistor. . . . .	150	82	ohms
Amplification Factor. . . . .	40	—	
Plate Resistance (Approx.). . . .	8200	150000	ohms
Transconductance. . . . .	4900	7000	$\mu\text{mhos}$
Plate Current . . . . .	9	15	ma
Grid-No.2 Current . . . . .	—	3.4	ma
Grid-No.1 Voltage (Approx.) for plate current of 100 $\mu\text{amp}$ .	-6.5	-8	volts

#### Mechanical:

Mounting Position . . . . . Any  
Maximum Overall Length. . . . . 2-5/8"  
Maximum Seated Length . . . . . 2-3/8"  
Length, Base Seat to Bulb Top (Excluding tip) . . 2"  $\pm$  3/32"

<sup>0</sup> without external shield.

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Maximum Diameter . . . . . 7/8"  
 Dimensional Outline. . . . . See General Section  
 Bulb . . . . . T-6-1/2  
 Base . . . . . Small-Button Noval 9-Pin (JETEC No.E9-1)  
 Basing Designation for EOTTOM VIEW . . . . . 9DX

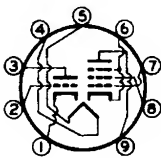
Pin 1 – Triode  
 Cathode

Pin 2 – Triode  
 Grid

Pin 3 – Triode  
 Plate

Pin 4 – Heater

Pin 5 – Heater



Pin 6 – Pentode

Cathode,  
 Grid No.3,  
 Internal  
 Shield

Pin 7 – Pentode  
 Grid No.1

Pin 8 – Pentode  
 Grid No.2

Pin 9 – Pentode  
 Plate

### AMPLIFIER – Class A<sub>1</sub>

#### Maximum Ratings, Design-Center Values:

	Triode Unit	Pentode Unit	
PLATE VOLTAGE. . . . .	300 max.	300 max.	volts
GRID-No.2 (SCREEN) SUPPLY VOLTAGE. . . . .	–	300 max.	volts
GRID-No.2 VOLTAGE. . . . .	–	See Grid-No.2 Input	

Rating Chart at front of Receiving Tube Section

GRID-No.1 (CONTROL-GRID)

VOLTAGE:

Positive bias value. . . . . 0 max. 0 max. volts

PLATE DISSIPATION. . . . . 2.5 max. 3 max. watts

GRID-No.2 INPUT:

For grid-No.2 voltages  
 up to 150 volts. . . . . – 1 max. watt

For grid-No.2 voltages  
 between 150 and  
 300 volts. . . . . – See Grid-No.2 Input

Rating Chart at front of Receiving Tube Section

PEAK HEATER-CATHODE

VOLTAGE:

Heater negative with  
 respect to cathode . . . . . 200 max. 200 max. volts

Heater positive with  
 respect to cathode . . . . . 200<sup>▲</sup>max. 200<sup>▲</sup>max. volts

<sup>▲</sup> The dc component must not exceed 100 volts.



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## MEDIUM-MU TRIODE — SHARP-CUTOFF PENTODE

### Maximum Circuit Values:

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Grid-No.1-Circuit Resistance:			
For fixed-bias operation. .	0.5 max.	0.25 max.	megohm
For cathode-bias operation.	1.0 max.	1.0 max.	megohm

### OPERATING CONSIDERATIONS

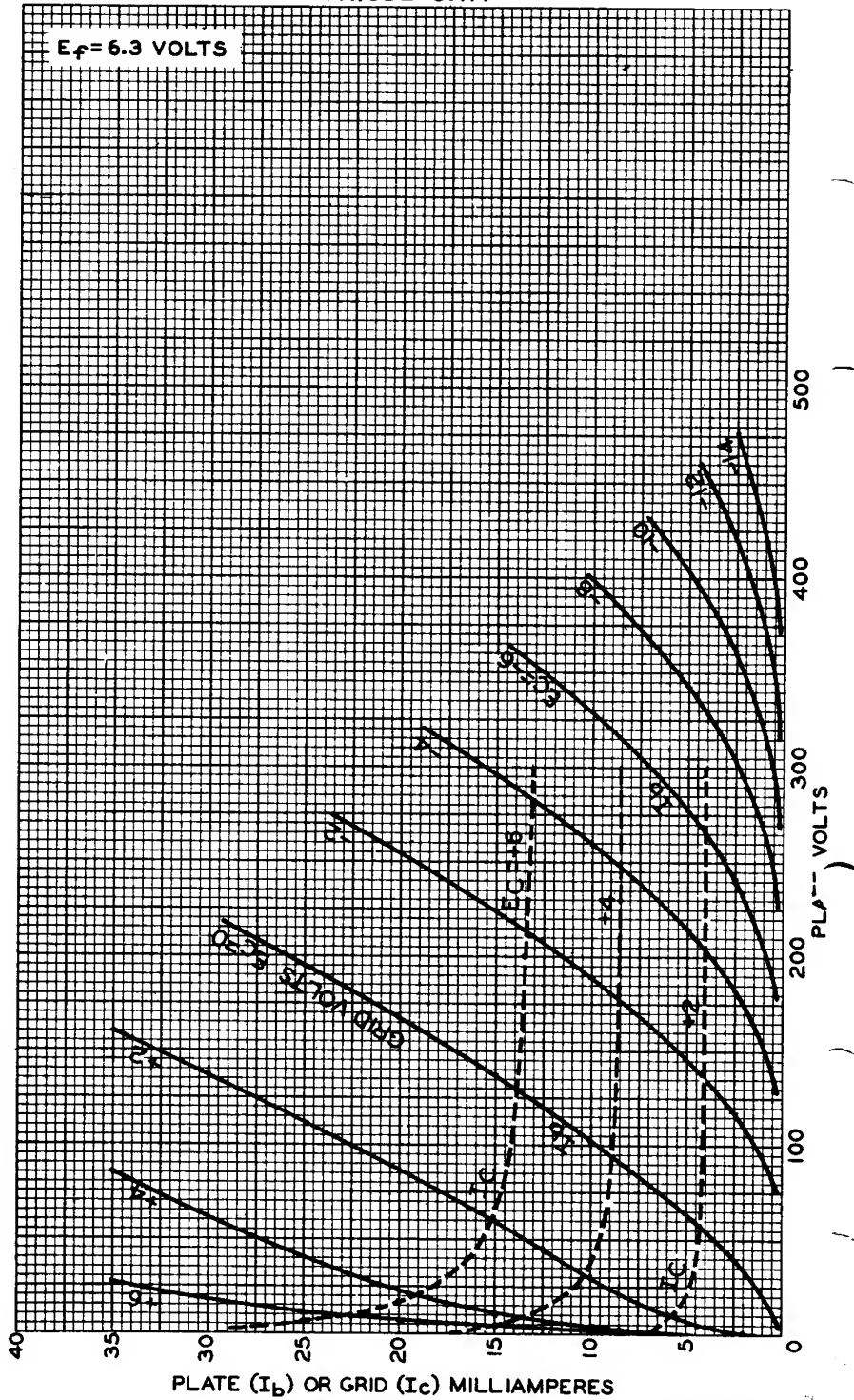
Because the *internal shield* is connected to the cathode and grid No.3, the impedance in the cathode circuit should be kept as low as possible to minimize cross-coupling effects.

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# AVERAGE CHARACTERISTICS TRIODE UNIT



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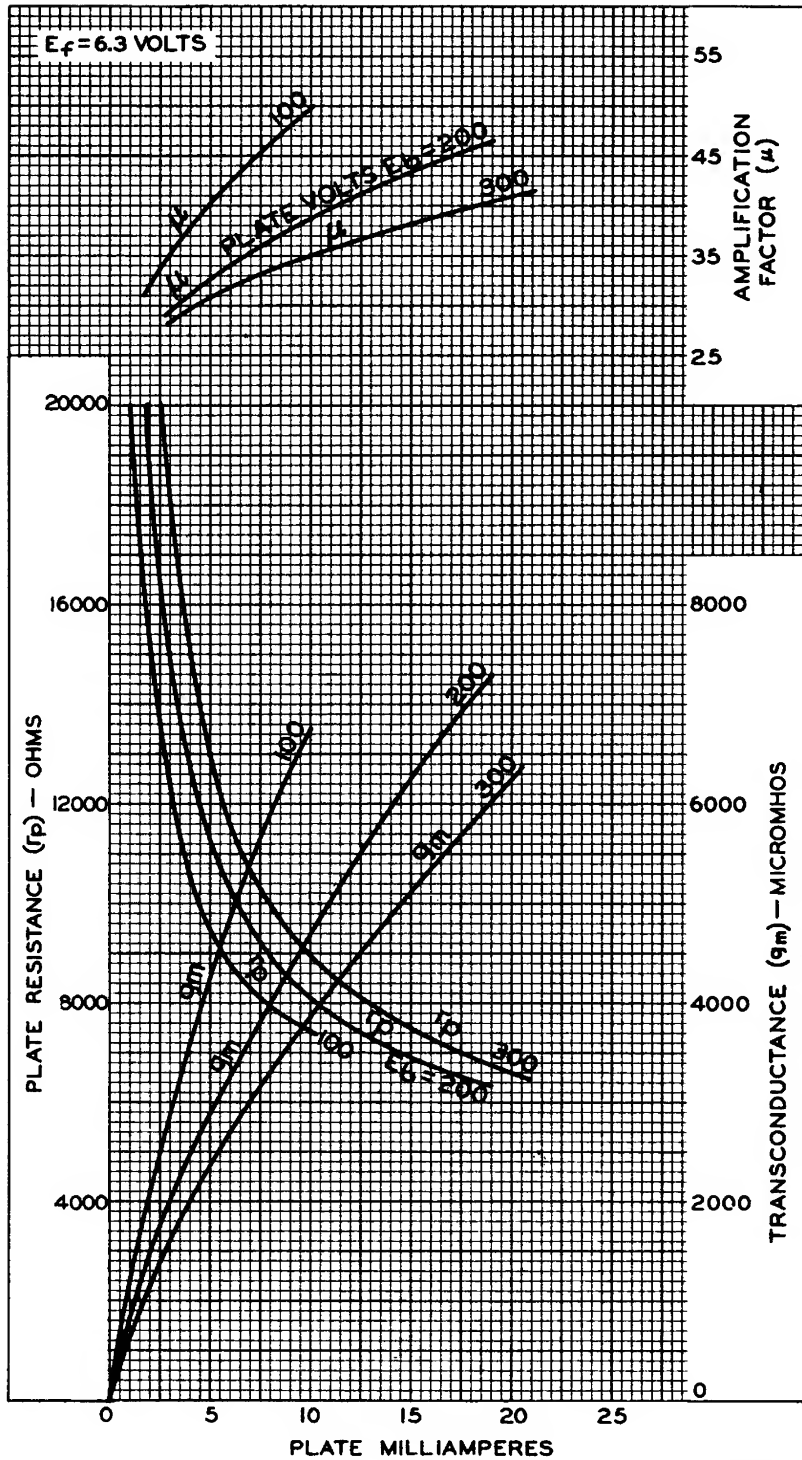
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AVERAGE CHARACTERISTICS  
TRIODE UNIT

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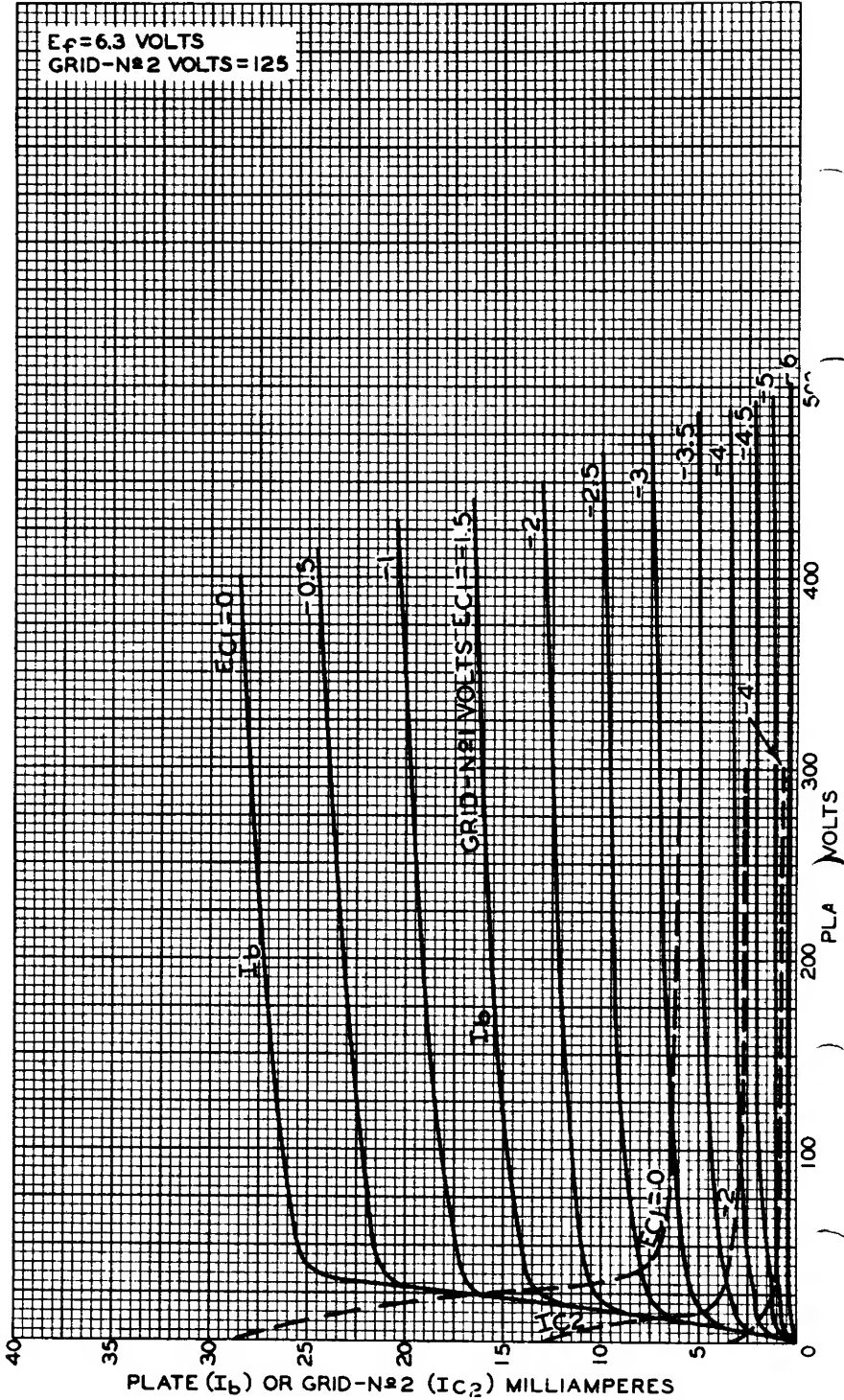
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# AVERAGE CHARACTERISTICS PENTODE UNIT



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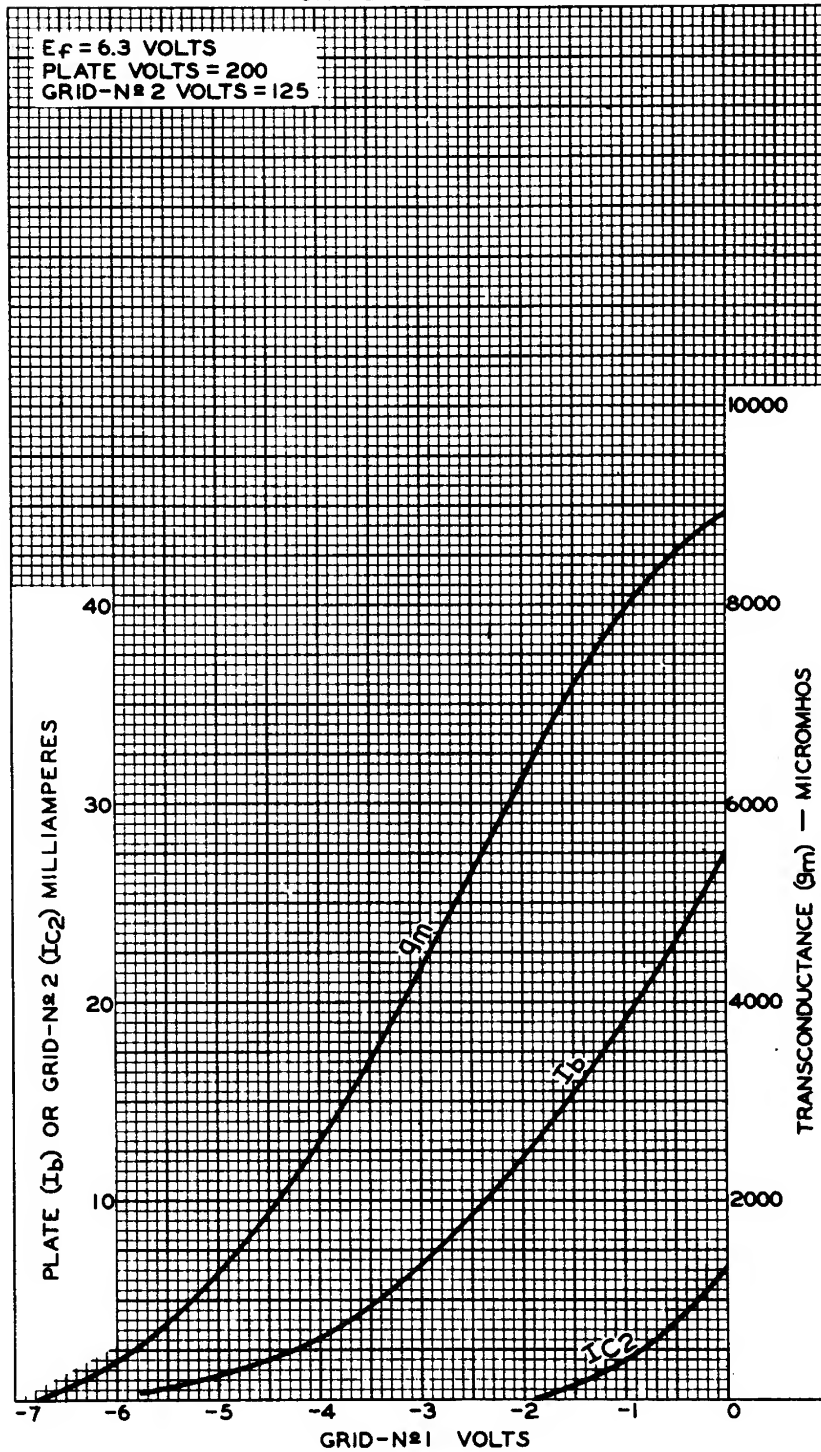


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# AVERAGE CHARACTERISTICS FOR PENTODE UNIT

$E_f = 6.3$  VOLTS  
PLATE VOLTS = 200  
GRID-N#2 VOLTS = 125



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